

WHAT IS CLAIMED IS:

1 **1.** A valve for cyclically connecting a vacuum and a blower to a filter
2 comprising a box having three openings therein, a first of said openings being
3 connectable to the vacuum, a second of said openings being connectable to the
4 blower and a third of said openings being connectable to the filter, a gate within said
5 box adapted to be biased by the blower and the vacuum toward a first position in
6 which said gate closes said first opening and means outside said box for holding
7 said gate against said bias in a second position in which said gate closes said
8 second opening, said holding means being adapted to intervally release said gate
9 to said bias to close said first opening.

1 **2.** A valve according to claim 1, said gate comprising a flapper hinged
2 for angular motion between said first and second positions.

1 **3.** A valve according to claim 2, said holding means comprising a rotating
2 cam and a follower fixed to said flapper.

1 **4.** A valve according to claim 3, said holding means having an irregularity
2 in a perimeter of said cam for internally releasing said gate.

1 **5.** A valve according to claim 4, further comprising means for
2 intermittently activating rotation of said cam.

1 **6.** A valve according to claim 4 further comprising means for
2 intermittently simultaneously activating rotation of said cam and operation of said
3 blower.

1 **7.** A system for cyclically connecting a plurality of filters to a vacuum and
2 a blower comprising a plurality of valves, each valve comprising a box having three
3 openings therein, a first of said openings being connectable to the vacuum, a
4 second of said openings being connectable to the blower and a third of said
5 openings being connectable to one of the plurality of filters, and a gate within said
6 box adapted to be biased by the blower and the vacuum toward a first position in
7 which said gate closes said first opening and means outside said box for holding
8 each of said gates against said bias in a second position in which each said gate
9 closes its said second opening, said holding means being adapted to intervally
10 release said gates to said bias to sequentially close said first openings.

1 **8.** A system according to claim 7, each said gate comprising a flapper
2 hinged for angular motion between its respective said first and second positions.

1 **9.** A system according to claim 8, said holding means comprising a
2 rotating cam and a plurality of followers, one fixed to each said flapper.

1 **10.** A system according to claim 9, said holding means having an
2 irregularity in a perimeter of said cam for intervally sequentially releasing said gates.

1 **11.** A system according to claim 10, said cam being circular.

1 **12.** A system according to claim 11, said followers being equally angularly
2 displaced along a perimeter of said cam.

1 **13.** A system according to claim 12, said irregularity releasing each said
2 gate for approximately 1/12 rotation of said cam.

1 **14.** A cleaning machine comprising:

2 a plurality of filters;

3 a vacuum;

4 a blower;

5 a plurality of valves, each valve comprising

6 a box having three openings therein, a first of said openings being
7 connectable to the vacuum, a second of said openings being connectable to the
8 blower and a third of said openings being connectable to one of the plurality of
9 filters, and

10 a gate within said box biased by a pressure from the blower and a
11 suction from the vacuum toward a first position in which said gate closes said first
12 opening; and

13 means outside said box for holding each of said gates against said bias in
14 a second position in which each said gate closes its said second opening, said
15 holding means being adapted to intervally release said gates to said bias to
16 sequentially close said first openings.

1 **15.** A machine according to claim **14**, each said gate comprising a flapper
2 hinged for angular motion between its respective said first and second positions.

1 **16.** A machine according to claim **15**, said holding means comprising a
2 rotating cam and a plurality of followers, one fixed to each said flapper.

1 **17.** A machine according to claim **16**, said holding means having an
2 irregularity in a perimeter of said cam for intervally sequentially releasing said gates.

1 **18.** A system according to claim **17**, said cam being circular.

1 **19.** A system according to claim **18**, said followers being equally angularly
2 displaced along a perimeter of said cam.

1 **20.** A system according to claim **19**, said irregularity releasing each said
2 gate for approximately 1/12 rotation of said cam.

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